CPC COOPERATIVE PATENT CLASSIFICATION

G04G ELECTRONIC TIME-PIECES

NOTE

This subclass covers:

- electronic time-pieces with no moving parts;- electronic
circuitry for producing timing pulses irrespective of the
nature of the time indicating means utilised.

This subclass does not cover electronic time-pieces with moving parts, which are covered by subclass G04C.

G04G 3/00 **Producing timing pulses** (driving circuits for stepping motors G04C 3/14; producing preselected time intervals for use as timing standards G04F 5/00; pulse technique in general H03K; control, synchronisation, or stabilisation of generators in general H03L)

G04G 3/02 . Circuits for deriving low frequency timing pulses from pulses of higher frequency (pulse frequency dividers in general H03K 23/00 to H03K 29/00)

G04G 3/022 . . {the desired number of pulses per unit of time being obtained by adding to or substracting from a pulse train one or more pulses (in general G06F 7/68)}

G04G 3/025 . . {by storing time-date which are periodically investigated and modified accordingly, e.g. by using cyclic shift-registers}

G04G 3/027 . . {by combining pulse-trains of different frequencies, e.g. obtained from two independent oscillators or from a common oscillator by means of different frequency dividing ratios (sychronisation of electric time pieces G04G 7/00, G04C 11/00)}

G04G 3/04 . Temperature-compensating arrangements

G04G 5/00 **Setting, i.e. correcting or changing, the time-indication** (radio-controlled time-pieces G04R)

G04G 5/002 . { brought into action by radio}

WARNING

This group is no longer used for the classification of new documents as from September 1, 2012.The backlog of this group is being continuously reclassified to subgroups of G04R

G04G 5/005 . {Debouncing circuits}

G04G 5/007 . {by using a separate register into which the entire correct setting is introduced, which is thereafter transferred to the time counters}

G04G 5/02   . by temporarily changing the number of pulses per unit time, e.g. quick-feed method

G04G 5/022   . . {quick-feed method}

WARNING

Not complete, see also G04G 5/02

G04G 5/025   . . . {the time-counters first being reset to zero}

G04G 5/027   . . {by adding or suppressing individual pulses, e.g. for step-motor}

WARNING

Not complete, see also G04G 5/02

G04G 5/04   . by setting each of the displayed values, e.g. date, hour, independently

G04G 5/041   . . { Correction of the minutes counter in function of the seconds' counter position at zero adjustment of the latter}

G04G 5/043   . . {using commutating devices for selecting the value, e.g. hours, minutes, seconds, to be corrected}

WARNING

Not complete, see also G04G 5/04

G04G 5/045   . . . {using a sequential electronic commutator}

WARNING

Not complete, see also G04G 5/04

G04G 5/046   . . . . {by using a separate register into which the correct setting of one of the counters is introduced which is thereafter transferred to the selected time-counter to be reset}

G04G 5/048   . . . { by using a seperate register into which the correct setting of the selected time-counter is introduced which is thereafter transferred to the time-counter to be reset}

G04G 7/00   **Synchronisation** (radio-controlled time-pieces G04R)

G04G 7/005   . {provided with arrangements to prevent synchronisation by interfering signals (G04G 7/023 takes precedence)}

G04G 7/02   . by radio

WARNING

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G04G 7/023   . . {provided with arrangements to prevent synchronisation by interfering signals}

G04G 7/026	. .	{the time-piece preparing itself on set times on the reception of the synchronising signal}

G04G 9/00   **Visual time or date indication means**

G04G 9/0005	.	{Transmission of control signals}
G04G 9/0011	. .	{using coded signals (synchronisation combined with automatic setting at regular intervals, e.g. by coded signals G04G 7/00)}
G04G 9/0017	.	{in which the light emitting display elements may be activated at will or are controlled in accordance with the ambient light}
G04G 9/0023	.	{by light valves in general (G04G 9/06, G04G 9/12 takes precedence; electro-, magneto- or acousto-optic devices in general G02F 1/00)}
G04G 9/0029	. .	{Details}
G04G 9/0035	. . .	{constructional}
G04G 9/0041	. . . .	{Illumination devices}
G04G 9/0047	. . .	{electrical, e.g. selection or application of the operating voltage}
G04G 9/0052	. . . .	{using means to adjust the display in accordance with the ambient light, e.g. switching or controlling a supplementary light source}
G04G 9/0058	.	{using a cathode ray tube as display device (displaying supplementary informative, e.g. time on TV screen H04N 5/445)}
G04G 9/0064	.	{in which functions not related to time can be displayed (digital output to display devices of digital computers G06F 3/14)}
G04G 9/007	. .	{combined with a calculator or computing means}
G04G 9/0076	.	{in which the time in another time-zone or in another city can be displayed at will}
G04G 9/0082	.	{by building-up characters using a combination of indicating elements and by selecting desired characters out of a number of characters or by selecting indicating elements the positions of which represents the time, i.e. combinations of G04G 9/02 and G04G 9/08}
G04G 9/0088	. .	{by controlling light sources, e.g. electroluminescent diodes}
G04G 9/0094	. .	{using light valves, e.g. liquid crystals}
G04G 9/02	.	by selecting desired character out of a number of characters or by selecting indicating elements the position of which represent the time, e.g. by using multiplexing techniques {(G04G 9/0082 takes precedence)}
G04G 9/022	. .	{using multiplexing techniques}
G04G 9/025	. .	{provided with date indication}
G04G 9/027	. .	{provided with means for displaying at will a time indication or a date or a part thereof}
G04G 9/04	. .	by controlling light sources, e.g. electroluminescent diodes {(G04G 9/0058 takes precedence)}
G04G 9/042	. . .	{using multiplexing techniques}
G04G 9/045	. . .	{provided with date indication}
G04G 9/047	. . .	{provided with means for displaying at will a time indication or a date or a part

		thereof}
G04G 9/06	. .	using light valves, e.g. liquid crystals
G04G 9/062	. . .	{using multiplexing techniques}
G04G 9/065	. . .	{using a drop of liquid suspended by capillary forces and moved by an electric field}
G04G 9/067	. . .	{using mechano-optical means}
G04G 9/08	.	by building-up characters using a combination of indicating elements, e.g. by using multiplexing techniques {(G04G 9/0082 takes precedence)}
G04G 9/082	. .	{using multiplexing techniques}
G04G 9/085	. .	{provided with date indication}
G04G 9/087	. .	{provided with means for displaying at will a time indication or a date or a part thereof}
G04G 9/10	. .	by controlling light sources, e.g. electroluminescent diodes {(G04G 9/0058 takes precedence)}
G04G 9/102	. . .	{using multiplexing techniques}
G04G 9/105	. . .	{provided with date indication}
G04G 9/107	. . .	{provided with means for displaying at will a time indication or a date or a part thereof}
G04G 9/12	. .	using light valves, e.g. liquid crystals
G04G 9/122	. . .	{using multiplexing techniques}
G04G 9/124	. . .	{provided with date indication}
G04G 9/126	. . .	{provided with means for displaying at will a time indication or a date or a part thereof}
G04G 9/128	. . .	{using mechano-optical means}
G04G 11/00		**Producing optical signals at preselected times**
G04G 13/00		**Producing acoustic time signals**
G04G 13/02	.	at preselected times, e.g. alarm clocks
G04G 13/021	. .	{Details}
G04G 13/023	. . .	{Adjusting the duration or amplitude of signals}
G04G 13/025	. .	{acting only at one preselected time}
G04G 13/026	. .	{acting at a number of different times}
G04G 13/028	. .	{combined with a radio}
G04G 15/00		**Time-pieces comprising means to be operated at preselected times or after preselected time intervals** (G04G 11/00, G04G 13/00 take precedence; {electronic timers G04F 1/005}; pulse delay circuits H03K 5/13; electronic time-delay switches H03K 17/28; electronic time-programme switches which automatically terminate their operation after the programme is completed H03K 17/296)
G04G 15/003	.	{acting only at one preselected time or during one adjustable time interval}
G04G 15/006	.	{for operating at a number of different times (cigar or cigarette receptacles or boxes

with means for limiting the frequency of smoking A24F 15/005)}

G04G 17/00   **Structural details ; Housings** (constructional details of radio-controlled time-pieces, e.g. antennas G04R 60/00)

G04G 17/005   . {Time-pieces combined with games}

G04G 17/02   . Component assemblies
G04G 17/04   . . Mounting of electronic components
G04G 17/045   . . . {Mounting of the display}
G04G 17/06   . . Electric connectors, e.g. conductive elastomers

G04G 17/08   . Housings
G04G 17/083   . . {Watches distributed over several housings}
G04G 17/086   . . {Desktop clocks}

G04G 19/00   **Electric power supply circuits specially adapted for use in electronic time-pieces**

G04G 19/02   . Conversion or regulation of current or voltage
G04G 19/04   . . Capacitive voltage division or multiplication
G04G 19/06   . . Regulation

G04G 19/08   . Arrangements for preventing voltage drop due to overloading the power supply

G04G 19/10   . Arrangements for supplying back-up power

G04G 19/12   . Arrangements for reducing power consumption during storage

G04G 21/00   **Input or output devices integrated in time-pieces**

G04G 21/02   . Detectors of external physical values, e.g. temperature
G04G 21/025   . . { for measuring physiological data}

G04G 21/04   . using radio waves (radio-controlled time-pieces G04R)

G04G 21/06   . using voice

G04G 21/08   . Touch switches specially adapted for time-pieces

G04G 99/00   **Subject matter not provided for in other groups of this subclass**

G04G 99/003   . { Pulse shaping; Amplification}

G04G 99/006   . { Electronic time-pieces using a micro-computer, e.g. for multi-function clocks}